Office Memorandum • UNITED STATES GOVERNMENT

TO : Chief, Communications Engineering Division **DATE:** 10 June 1953

FROM : Chief, Communications Operations Division

SUBJECT: Transmittal of [redacted] Dispatch 25X1

Forwarded herewith is a copy of [redacted] dated 19 May 1953, for your information and future reference. 25X1

FOR THE CHIEF, COMMUNICATIONS OPERATIONS DIVISION:

[redacted] 25X1

Chief, Special Projects Branch

[redacted] 25X1

Air Pouch [redacted] 25X1

Assistant Director for Communications 19 May 1953

Chief, [redacted] 25X1

Operational

Norwegian Activation Receiver

Ref: [redacted] 25X1

1. We attach herewith three copies of the [redacted] technical report on the [redacted] broadcast receiver. [redacted] letter covering this report contains the following statements: 25X1 25X 25X1

"I attach our technical report on a model of the [redacted] broadcast receiver. It is interesting to note that the performance figures quoted in both reports are very similar. 25X1

"From an operational point of view this set appears to be a very useful piece of equipment that is slightly spoiled by the inclusion of a loudspeaker which more than doubles its size."

2. With regard to Para 2, D.O. 53-84, we understand that a quantity of the [redacted] receivers can be purchased for use elsewhere. As agreed during the discussions at Headquarters, we will ascertain [redacted] views on this subject and will forward their reply. 25X1 25X1

[redacted] 25X1

Encl.

Distribution
ADCO
Files

SECRET
SECURITY INFORMATION

25X1

TEST REPORT

[redacted] SHORT WAVE RECEIVER 25X1

GENERAL

Construction.

Two units, power pack and receiver, both made of sheet steel, with grey cellulosed panel on receiver. A four-core cable with plug connects the two units.

	Size	Weight
Receiver	11¼" x 3-3/4" x 2-3/4"	5 lbs
Power Supply	7½" x 3-3/4" x 2½"	3½ lbs

Accessibility

Both units are easily removed from their cases, and due to the open construction and wiring employed should be very easily repaired.

Accessories

The single small earpiece and power cable are contained in a compartment at the end of the receiver.

POWER SUPPLY

Source

The power supply will operate from either 130, 150, or 220v AC only.

Circuit

The HT supply is from a half-wave rectifier followed by two stages of resistance smoothing. The LT section employs push-pull rectification followed by a rectifier stabiliser, the rectifier and stabiliser are mounted on a common stem. The supply is not fused.

Efficiency

AC input at full load 220v 60 mA.

	No load	full load
HT output	120 v	82 v
LT output	1.9 v	1.5 v

(Note: Dry Battery operation is obviously intended as well, and will require 1.5v LT plus 80/90v HT).

RECEIVER

Circuit

Conventional superhet as follows: mixer oscillator DK40, IF amplifier DF 91, detector and LF DAF 91, pentode output DL 94, beat oscillator DF 91. The mixer oscillator is neutralised. The beat oscillator frequency is varied by a small copper plate moving across the end of the coil. A small speaker is fitted.

Performance

Coverage 3.6 - 10 Mc/s
9.0 - 24 Mc/s

Sensitivity

In the following table the CW sensitivity figures refer to the minimum signal in microvolts, and the RT figures to the minimum usable signal in microvolts modulated by a 1000 c/s tone to a depth of 30%.

Frequency Mc/s	Sensitivity CW	Sensitivity RT	Image Ratio	IF Ratio
3.6	2	10	100	1000
4.5	1	2	83	2700
6.0	1	2	15	3000
8.0	0.5	2	10	3300
10.0	2	6	3.5	15000
9.0	4	12	12	3300
11.0	1	5	11	5000
15.0	1	6	10	4400
20.0	1	2	11	20000
24.0	2	8	1.2	16000

Bandwidth

6 dB 7.5 KC/s
20 dB 15.0 KC/s

Intermediate Frequency

460 Kc/s

Power Output

250 mW maximum at 1000 c/s into 200 ohm load.

CONFIDENTIAL

Calibration

Due to the wide frequency range per band the higher frequency calibrations are very compressed, and occur at 500 Kc/s intervals. The maximum calibration error is about 100 Kc/s.

Stability

The mechanical stability is good, but electrical drift occurred steadily even after 30 minutes operation. This was put down to gradual warming up of the LT stabilising rectifier in the power supply.

AVC

An increase of 20 dB in the input signal gave a 10 dB increase in the set output.

Controls

Tuning, wave-change with off position, volume, beat oscillator tuning, beat oscillator switch, dial light switch.

Notes

Due to open wiring and construction, trimmers, valves and components are easily replaced. No hum was noticed with mains operation.